

Remarks/Arguments

This Reply is in response to the Office action mailed on December 20, 2005. The undersigned further wishes to thank the Examiner for the interview of February 28, 2006 and the telephone conversation of March 8, 2006. As per the recommendation of the Examiner, the amended claims are a combination of claims from copending applications 10/659,090 (claims 1-13), 10/659,149 (claims 14-26), 10/690,050 (claims 27, 30-37), and 10/690,391 (38-42). Support for the newly amended claims 28 and 29 can be found from the figures and tables in the application. A confirmation on the unique characteristic of the manufactured copper ingot from the third party companies can be found in the Declaration filed under 37 CFR 1.132. The errors in the specification have been corrected by the amendment set forth above. Claims 9, 14, and 27 have been amended as per the Examiner's suggestions.

No new matter is added by virtue of these amendments.

Obviousness Type Double Patenting

All claims have been provisionally rejected under the doctrine of obviousness-type double patenting over US patent No. 6,572,792 and 6,921,497. The Applicant is hereby submitting a terminal disclaimer to both patents cited herewith. Withdrawal of the rejection is respectfully requested. It is further noted that the presentation of claims from the copending applications will also raise double patenting issues. Any claim allowed in this application will be promptly deleted in the copending application. If, after examination of all the pending claims in this application, any claim is to be retained in any other application, a terminal disclaimer will be promptly filed in said application to avoid the issue.

Rejection Under 35 U.S.C. §101

The Examiner rejected claims 14-27, 30-42 in each of the copending applications, stating that the disclosed invention is inoperative and therefore lacks utility, asserting that "the instant compositions cannot exist according to conventional scientific theory."

Applicant respectfully disagrees. While not bound by the theory, the Applicant has provided substantial data and evidence that supports the conclusion that the claimed compositions are characterized by a modification to the composition's electronic state. As established by the Declaration filed herewith, this data has been confirmed by third parties. As established by the evidence presented in the specification with respect to the physical properties (altered magnetism, ductility, resistivity, reactivity, etc.) that flow from altering an element's electronic state enables the new composition of matter for a variety of utilities. Applicant respectfully requests that the rejection under 35 U.S.C. §101 be withdrawn.

Rejection Under 35 U.S.C. §112, First Paragraph

The Examiner rejected claims 10-13 stating that the limitations recited in each of these claims do not find literal or inherent support in the disclosure as originally filed. Applicant disagrees. The Examiner does not dispute that the specification teaches copper compositions produced by an iterative process which is characterized by the physical properties described in the claim. Thus, albeit the words of the claim are not quoted from the specification, the specification certainly supports the subject matter being claimed in such a way as to teach one of ordinary skill in the art that Dr. Nagel was in possession of the invention at the time the application was filed. Withdrawal of the rejection is requested.

The Examiner further rejected claims 14-26 (from application no. 10/659,149) stating that according to all generally accepted theories of atomic structure, the process disclosed throughout the instant specification cannot alter the underlying atomic structure of a composition to arrive at the presence of "new elements" different from the starting composition. The Examiner also rejected claims 27, 30-42 (from application no. 10/690,050 and 10/690,391) stating that the specification does not enable one of ordinary skill in the art to make or use a composition of matter that is distinguishable from its naturally occurring state, in that it would require undue experimentation to do so. The Examiner further asserts that the data produced may have resulted from the introduction

of impurities during sample preparation or heating schedule, or inadvertently present during preparation for analysis.

The Applicant respectfully traverses. Firstly, the Applicant is not asserting that new elements are being made in the present application. Without being bound by theory, the Applicant believes that the process imparts upon existing compounds (e.g., copper) which exhibits novel properties. Further, the Examiner need not embrace the Applicant's theories to find the invention patentable. Indeed, not all phenomena observed in nature are bound or easily explained by "conventional theories." Rode, et al. in *Phys. Rev. B*, **70**, 2004, for example, discusses unconventional magnetism in an all-carbon nanofoam. A copy of this paper is attached for the Examiner to review. The Applicant has presented 14 working examples with detailed XRF analysis that showed each of the manufactured ingots contains a different elemental signature from its corresponding natural occurring metal state. There is no basis to conclude that the result is explained by impurities or from transmutation of metals. The manufactured ingots are still the same starting metal, but exhibit different electronic state scans from their original precursor in the GMS, XRF, PIXE, and GDOES analyses. Confirmation of these analyses from the third party companies for the copper ingot is attached as a 1.132 declaration. Withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. §112, First Paragraph, Enablement

The Examiner further rejected claims 1-13 stating that of the five examples directed to the "tailored" copper, only two exhibit any type of magnetic activity and therefore a skilled artisan would be unable to produce the claimed magnetic copper compositions without undue experimentation. The Applicant respectfully disagrees. While it is true that only two examples reported in the specification to exhibit substantial magnetic property, two had minimal or reduced activity as compared to the others (page 69, line 15 and page 72, lines 4-5). Further, the negative result of the remaining example (Example 1) does not prove the absence of magnetic property. *In re Wands*, it was found by the court that the enablement was met even though only four out of the nine examples

showed the desired properties. Thus, the fact that the magnetic properties were not observed each time the process was repeated does not support the conclusion that the person of ordinary skill in the art would not be enabled to make such a product given the teachings of the reference. *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir 1988). Applicant respectfully requests that the rejection be withdrawn.

Rejection Under 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 1-7, 9-11, and 13 as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Examiner states that the terms "substantially free of other metals", "substantially no difference in Gauss readings", and "essentially zero" in claims 1-7, 9-11, and 13 are relative terms, which render the claim indefinite. The Applicant respectfully disagrees. The terms "substantially" and "essentially" are used extensively in patents and are to be interpreted within the context of the specification and examples. For example, the phrase "a silicon dioxide source that is essentially free of alkali metal" was held to be definite because the specification contained guidelines and examples that were considered sufficient to enable a person of ordinary skill in the art to draw a line between unavoidable impurities in starting materials and essential ingredients. *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (CCPA 1983). The examples in the present application clearly set forth the purity for each starting material and that the material is not in contact with impurities or other metals. Example 1 clearly states the use of copper with 99.98% purity (page 30, line 7). Applicant respectfully asserts that the present specification provides sufficient guidance and exemplification to particularly point out and distinctly claim the subject matter, in spite of the use of relative words.

The Examiner further rejected claims 14-27 and 30-31 stating that the claimed "Uniquant analysis report" is a trademark software program and therefore the claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. As per the suggestion of the Examiner, claims 14 and 27

have been amended to recite “an X-ray fluorescence” instead of “a calibrated Uniquant”. Applicant respectfully requests that the rejection be withdrawn.

Rejection Under 35 U.S.C. §102(b)

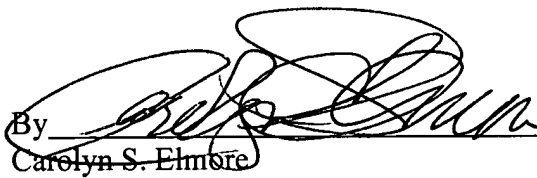
The Examiner rejected claims 1-13 as being anticipated by either Svensson et al (Magnetic and electrical properties of copper-iron.), Dovgopol et al (Magnetic thermodynamic, and kinetic properties of copper containing 0.4-2.0 atom% iron impurities), or Campbell et al (A Moessbauer study of the magnetic properties of copper-iron (CuFe) alloys). Applicant respectfully disagrees. Svensson discloses Cu-Fe alloys containing 0.2-1.7 atom% (2,000-17,000 ppm) Fe. Dovgopol discloses Cu-Fe alloys containing 0.4-2.0 atom% (4,000-20,000 ppm) Fe. Campbell discloses Cu-Fe alloys containing 0.24-4.6 atom% (2,400-46,000 ppm) Fe. The amount of iron present in these metals is said to be responsible for the magnetism. The XRF data in the application and the GDMS, XRF, PIXE and GDOES analyses from the third parties, all detected the Fe signature of less than 472 ppm. The presence of Fe reported in analyses does not provide the basis to conclude that Fe is present in the manufactured copper ingot because the copper ingot was never in contact with such element. Reiterating the presently claimed invention, the manufactured copper ingot is the same starting copper material (99.98% in purity), but exhibits different electronic state scan in the GDMS, XRF, PIXE and GDOES analyses from its original precursor. It is believed that the cited prior art does not anticipate the present claims. Applicant respectfully requests that the rejection under 35 U.S.C. §102(b) be withdrawn.

Conclusion

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned at (978) 251-3509.

Respectfully submitted,

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